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**THIS IS UNEVALUATED INFORMATION**

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1. The Czechoslovak electric-machinery industry has been, for the most part, dependent on imports of brushes of foreign manufacture. This situation is not likely to change in the near future.
  2. There was only one factory for production of brushes in Czechoslovakia -- the Kablo Topolcany, National Enterprise, in Topolcany (N 48-39, E 18-11), which was under the jurisdiction of the Ministry of Machinery Construction. This factory for production of brushes was originally located in Sobedruhy (N 50-40, E 13-52) but was transferred to Topolcany sometime around 1948. In addition to brushes for electric machinery, Kablo produced electrodes for furnaces. There was another factory in Czechoslovakia which produced electrodes but source could not remember its name.
  3. Brushes of the following types and descriptions were produced at Kablo:
    - a. The T type, hard carbon, in two qualities, T<sub>1</sub> and T<sub>2</sub>.
    - b. The S type, a semi-hard brush, probably of graphite carbon composition, in two qualities, S<sub>1</sub> and S<sub>2</sub>.
    - c. The D-type brush, in D<sub>5</sub>, D<sub>6</sub>, and D<sub>10</sub> qualities, pure graphite, similar in quality to the Lfc/3b brush, a product of the Le Carbon firm.
    - d. The M type brush produced in several qualities, such as, M<sub>12</sub> and M<sub>18</sub>. These were metal-graphite brushes made from a combination of copper and graphite. A larger number designated a larger quantity of graphite. The M type brush with the largest quantity of graphite was M<sub>35</sub>.
  4. Kablo brushes were of poor quality and therefore their use was very limited. According to Ing. Drobnik (fnu), a top technician with the Kablo Research Institute in Prague, the plant in Topolcany could not achieve production of brushes to equal the quality of

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foreign-manufactured brushes and is not likely to be able to do so in the near future. Drobnik cited the following reasons:

- a. Kablo used only domestic raw materials which were not as pure as materials used in foreign production. This was especially true of graphite.
- b. Kablo did not have sufficiently large quantities of raw materials on hand.
- c. The plant was not experienced enough in production matters. There were instances when brushes of a relatively good quality were produced, but this happened only by chance and the plant could not consistently produce brushes of good quality.

5. In addition to their own products, Kablo Topolcany also distributed the following brushes of foreign manufacture:

- a. Electrographite brushes of the 8618 type. These brushes varied in appearance and in quality. This led source to believe they were of various origins; [redacted] that they were products of the German Ringsdorf firm and had been on stock, in the form of plates, since World War II. Kablo cut the brushes from the plates and prepared them for fitting. After 1952 this type of brush was more difficult to obtain because the stocks were being depleted.
- b. Siemens-Plania, East German electrographite brushes. The quality of these brushes varied from shipment to shipment. Because of their medium quality they did not prove satisfactory for use in high-speed dynamos. They were used only in medium-speed dynamos.
- c. Electrographite brushes from the Lessing firm in Nuremberg. These were of the E 12 and E 13 types; Kablo designations were EL 1 and EL 2. They were of medium quality.<sup>1</sup>
- d. Le Carbon products in two qualities, EG 40 and EG 40A.
- e. Standard-type brushes of the Morgan Carbon Crucible Co., an English firm.
- f. Brushes in two qualities from the Italian Monte Martini firm. Source did not know the type designations.
- g. Several types of brushes from the Rabassky firm in Vienna. [redacted]
- h. Electrographite brushes of Soviet manufacture, probably type EG 83, arrived at Topolcany in the summer of 1954. Source believed that they were the only Soviet brushes sent to Czechoslovakia because all efforts on the part of the V.I. Lenin Works, Electric Factory, in Pilsen-Doudlevec, to import Soviet brushes had failed. The EG 83 types were probably specifically intended for PG 33 turbogenerators but they arrived after the prototypes of PG 33 had already been equipped with Le Carbon brushes.<sup>2</sup>

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6. On 16 April 1954, the Technical Advisory Board of the Minister of Machinery Construction<sup>3</sup> held a conference in the building of the Ministry in Prague. The purpose of the conference was to substantiate how important it was to expand the production of brushes in Topolcany. About 20 people were present at this conference.

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Some of those present were: Dr. Hanka (fnu), manager of the Division for Strong-Current Electric Machinery of the Research Institute of the Ministry of Machinery Construction; Fetter (fnu), a professor at the Technical Institute in Prague; Ing. Kulda (fnu), from the V.I. Lenin Works, Electric Factory; a representative of CKD Stalingrad; a representative of MEZ Development; source as representative for MEZ Vsetin; representatives of the government administration, etc.

7. The main speaker at the conference was Ing. Novak (fnu), a prominent research worker in the field of brushes. Novak requested that production other than brushes be transferred from Topolcany to another location and that new production buildings and a housing project be built in Topolcany by Kablo. Novak wanted construction to begin immediately so that it would be possible for Kablo to meet domestic demands with good-quality brushes by 1956 and to develop a large export trade by 1958. A memorandum addressed to the Collegium of Ministers was prepared at this conference which requested increased brush production by Kablo in Topolcany. Source did not know the decision finally reached and did not know whether or not construction was started; however, he did not believe it was possible to expand the factory in the short time presumed by Novak.
8. During the same conference Novak and the above-mentioned Kulda alluded to a recent visit which they made to a Soviet factory for brush production. The factory was located somewhere in the European part of the Soviet Union; the equipment of the factory was old and outmoded; equipment of this type was used in German factories 20 or 30 years ago.
9. There were two other firms in Prague -- Dynamo Karbon and Electro-Karbon -- which imported brush materials from the West in the form of plates and cut the brushes from these plates. These were small firms and the brushes were for small motors only, such as those used in vacuum cleaners. Source believed that these firms ceased operation about 1949.
10. MEZ Vsetin, Moravian Electrotechnical Works in Vsetin (N 49-20, E 18-00), in most instances used brushes from the Le Carbon and Morgan Carbon firms. Other brushes used by the plant were manufactured by Schunk-Ebe and Ringsdorf, both German firms. The 12 N and similar types were imported from the latter firm to be used, for the most part, on slip rings of wound rotor induction motors. In addition to the imported brushes, the Ringsdorf 8618 type (see paragraph 5a) was used as a standard brush. Domestically manufactured Kablo brushes were used very rarely; only the M 18, M 35 and D types were used. The M types were used for low-voltage generators; however, they did not prove satisfactory and were no longer used after 1951; they were completely replaced by Siemens-Plania products. The Kablo T and S types were not used by MEZ Vsetin. As imports of good quality brushes from the West decreased after 1948, the use of the 8618-type brush by MEZ Vsetin increased accordingly. About 1952, when the 8618-type brush was no longer available, MEZ Vsetin used Lessing and Siemens-Plania products. However, when MEZ Vsetin prepared an official statement addressed to Kablo stating that no brushes other than Le Carbon or Morgan Carbon products could be used in a certain type of dynamo, Kablo delivered the products demanded.
11. In general, MEZ Vsetin did not have any particular difficulty in obtaining brushes. The main difficulty encountered was in the distribution of brushes within the plant. Better-quality brushes designed for use in a specific type dynamo were often diverted and installed in a dynamo other than the one for which they were originally intended. A situation similar to that which existed

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at MEZ Vsetin regarding the supply of brushes also existed at MEZ Development in Brno. This plant used the Kablo D-type brushes for amplidynes.

12. The situation was different, however, in Czechoslovakia's two largest electric-machinery factories -- the V.I. Lenin Works and CKD Stalingrad. These factories, because they produced mainly large machinery, always insisted on good-quality brushes imported from the West, such as Le Carbon and Morgan Carbon products. This was especially true of the V.I. Lenin Works, which imported mostly special qualities of brush products from the Morgan firm and the Lfc/3b type from the Le Carbon firm. For example, the three-phase AC commutator motor of the Schrage type, rotor-fed, a product of the V. I. Lenin Works, was designed to use Morgan brushes and no other brushes proved satisfactory because this type of motor was inclined to develop sparking. The Paper Works in Olsany (N 49-32, E 17-10) used motors of this type. When the time came for the brushes to be replaced, the Paper Works asked for an import license to import Morgan brushes. The license was not issued and Kablo products were installed instead. After a very short period of time, the brushes caused the commutator to turn black and the commutator had to be overhauled. It was source's opinion that all the electric dynamos produced by V.I. Lenin Works would cease operation should no Morgan brushes be available.

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